Postel

NETWORK WORKING GROUP
REQUEST FOR COMMENTS #38

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20 MARCH 1970
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Comments on Network Protocol
from NWG/RFC #36

The proposed protocol does not allow for the possible multiplexing of connections over links.

Generally, this presents no problem, but it might cause loading restrictions in the future. Two cases where routing multiple connections over the same link are apparent:

a) Where a user has several high speed connections, such as between processes that transmit files over the network. Assigning these connections to the same link limits the percentage of network resources that may be used by that user. This becomes particularly important when several store-and-forward IMP's are used by the network to effect the communication.

b) When two hosts each have their own independent network and desire to allow access to the other host's network over the ARPA net, a shortage of links may develop. Again, the assignment of several connections to the same link could help solve the problem.

The following changes in the protocol would make possible the future use of multiplexed links. It is not necessary to add the multiplexing, itself, to the protocol at this time.

a) The END and RDY must specify relevant sockets in addition to the link number. Only the local socket name need be supplied.

b) Problems arise with the RSM and SPD commands. Should they refer to an entire link, or just to a given connection? Since there is a proposal to modify the RFNM to accommodate these commands, it might be better to add another set of commands to block and unblock a connection, but I am not convinced that that is the best solution.

c) The destination socket must be added to the header of each message on the data link. Presumably this would consist of 32 bits immediately after the header and before the marking.

SMW/rb